Application No.: 10/517,371

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the

application:

LISTING OF CLAIMS:

1. (currently amended): A CDMA receiving device for estimating a signal power

and an interference noise power of a received signal for each of a plurality of fingers, and

combining a demodulated signal by using a signal-power-to-interference-noise-power ratio

estimated from these the estimated signal power and interference noise power of each of the

plurality of fingers, characterized by:

interference-noise-power calculation means (106, 206, 306, 406) for estimating an

interference noise power for each of the plurality of fingers in during a current slot;

storage means (110, 217, 317, 425) for storing therein an estimated value for the

interference noise power estimated for each of the plurality of fingers in during a last valid slot

before a the current slot;

first averaging means (108, 208, 308, 408) for averaging, for each of the plurality of

fingers, an estimated value for the interference noise power estimated in a during the current slot

by said interference-noise-power calculation means for a finger (106, 206, 306, 406) and the

estimated value for the interference noise power stored in said storage means (110, 217, 317,

425) during the last valid slot before the current slot for the finger to generate an averaged

estimated value for the interference noise power:

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first judging means (115, 213, 313, 421) for judging in which slot when each of the

plurality fingers finger becomes valid encounters a valid slot after a radio link is established; and

first switching means (112, 215, 315, 423) for coupling storing the interference noise

power in a current slot estimated by said interference noise power calculation means (106, 206,

306, 406) into to said storage means (110, 217, 317, 425) based on a judged result by said first

judging means (115, 213, 313, 421).

2. (original): The CDMA receiving device according to Claim 1, wherein said first

switching means (112, 215, 315, 423) stores the estimated value for the interference noise power

estimated in the current slot by the interference noise power calculation means (106, 206, 306,

406) into said storage means (110, 217, 317, 425) if said finger is first judged to be valid after the

radio link is established by said first judging means (115, 213, 313, 421).

3. (original): The CDMA receiving device according to Claim 1 or 2 further

comprising:

second judging means (223) for judging whether or not each finger is successively in a

valid state for a given period of time;

second averaging means (221) for averaging the estimated values for the interference

noise power among the fingers;

second switching means (219) for allowing said second averaging means (221) to average

the average estimated value for the interference noise power, which is averaged by said first

averaging means (208), based on a judged result by said second judging means (223); and

third switching means (210) for outputting either one of an averaged result by said first

averaging means (208) and an averaged result by said second averaging means based on a judged

result by said second judging means (223).

4. (original): The CDMA receiving device according to Claim 3, wherein:

said second switching means (219) allows said second average means (221) to use the

estimated value for the interference noise power for a finger, if said finger is judged to be

successively valid for a given period of time by said second judging means (223); and

said third switching means (210) outputs an averaged result by said second averaging

means (221) instead of said estimated value for the interference noise power for said finger if

said finger is judged to be valid though not continued for a given period of time by said second

judging means (223).

5. (original): The CDMA receiving device according to Claim 1 or 2, wherein said

storage means (317) stores only the estimated value for the interference noise power of one slot

before for each finger, said CDMA receiving device further comprising:

second judging means (319) for judging whether or not each of the fingers is successively

in a valid state for a given period of time; and

second switching means (310) for switching whether or not the average estimated value

for the interference noise power averaged by said first averaging means (308) is output based on

a judged result by said second judging means (319).

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6. (original): The CDMA receiving device according to Claim 5, further comprising:

signal-power-to-interference-noise-power ratio calculation means (324) for calculating a

signal-power-to-interference-noise-power ratio based on an output of said second switching

means (310), and demodulated-signal combining means (328) for combining the demodulated

signal based on a calculated result by said signal-power-to-interference-noise-power ratio

calculation means (324); and

third switching means (326) for outputting the demodulated signal to said demodulated-

signal combining means (328) based on the judged result by said second judging means (319).

7. (currently amended): The CDMA receiving device according to Claim 5-or-6,

wherein:

said second switching means (310) outputs an output of said first averaging means (308)

if said finger is judged to be successively valid for a given period of time by said second judging

means (319), and does not output the average estimated value for the interference noise power

averaged by said first averaging means (308), if said finger is judged not to be successively valid

for a given period of time by said second judging means (319); and

said third switching means (326) outputs said demodulated signal to said demodulated-

signal combining means (328), if said finger is judged to be successively valid for a given period

of time by said second judging means (319), and does not output the demodulated signal to said

demodulated-signal combining means (328), if said finger is judged not to be successively valid

for a given period of time by said second judging means (319).

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8. (original): The CDMA receiving device according to Claim 1 or 2, wherein said

storage means (425) stores therein only the estimated value for the interference noise power of

one slot before for each finger, said CDMA receiving device further comprising:

demodulation means (410) for demodulating the received signal by using an arbitrary

synchronization timing, second interference-noise-power calculation means (412) for estimating

the interference noise power in said current slot for said demodulated signal demodulated by said

demodulation means (410), second averaging means for averaging an interference noise power in

said current slot estimated by said second interference noise power calculation means (412) and

the estimated value for the interference noise power stored in said storage means (425); and

second judging means (419) for judging whether or not said finger is successively in a

valid state for a given period of time, and second switching means (416) for outputting either one

of an averaged result by said first averaging means (408) and an averaged result by said second

averaging means (414) based on the judged result by said second judging means (419).

9. (original): The CDMA receiving device according to Claim 8, wherein said second

switching means (416) outputs an output of said first averaging means (408), if said finger is

judged to be successively valid for a given period of time by said second judging means (419),

and outputs an output of said second averaging means (414), if said finger is judged not to be

successively valid for a given period of time by said second judging means (419).